

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in this application.

Listing of Claims:

1. (Currently Amended) An enhanced atomic layer deposition (ALD) process for achieving a substantially maximum film deposition rate as determined by film thickness per unit time, said process comprising:

exposing a wafer to a dose of a first chemically reactive precursor, said first chemically reactive precursor having a longer saturation time as compared to a second chemically reactive precursor to follow the first chemically reactive precursor, the dose of the first chemically reactive precursor being an under-saturated dose, and the first chemically reactive precursor being delivered in a manner so as to provide a substantially uniform film deposition on the wafer; and

exposing the wafer to a dose of the second chemically reactive precursor, the combination of respective doses of the first and second chemically reactive precursors ~~resulting in~~ selected to cause a saturated deposition rate for the second precursor being less than a maximum possible saturated deposition rate for the second chemically reactive precursor, said saturated deposition rate measured in film thickness per ALD cycle and being substantially invariant over increases in the dose of the second chemically reactive precursor,

wherein said first and second chemically reactive precursors are delivered sequentially in time.

2. (Cancelled)

3. (Cancelled)

4. (Original) The ALD process of claim 1, wherein the wafer is exposed to the second chemically reactive precursor dose without a purge following exposure to the first chemically reactive precursor dose.

5. (Original) The ALD process of claim 1, wherein the wafer is again exposed to the first chemically reactive precursor dose without a purge following exposure to the second chemically reactive precursor dose.
6. (Cancelled)
7. (Cancelled)
8. (Original) The ALD process of claim 1, wherein a purge is performed subsequent to exposing the wafer to the first chemically reactive precursor dose.
9. (Original) The ALD process of claim 1, wherein a purge is performed subsequent to exposing the wafer to the second chemically reactive precursor dose.
10. (Cancelled)
11. (Original) The ALD process of claim 1, wherein one of the first and second chemically reactive precursor doses comprises water (H₂O) and the other comprises Trimethylaluminum (TMA).
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)
15. (Original) The ALD process of claim 1, wherein one or both of the first and/or second chemically reactive precursor doses is applied for a time between approximately 0.02 sec to approximately 2 sec.
16. (Cancelled)

17. (Previously Presented) The ALD process of claim 1, wherein the dose of the second chemically reactive precursor is delivered substantially uniformly over the wafer.
18. (Original) The ALD process of claim 1, further comprising repeatedly exposing the wafer to the first and second chemically reactive precursor doses to form a material film on the wafer.
- 19.- 41. (Cancelled)
42. (Previously Presented) The ALD process of claim 1, wherein a non-uniformity of a thickness of a resulting film is within $\pm 1.5\%$, 1 sigma.
43. (Previously Presented) The ALD process of claim 1, wherein the first and second chemically reactive precursors are delivered substantially uniformly via a showerhead or distribution plate.
44. (Previously Presented) The ALD process of claim 1, wherein the saturated deposition rate for the second chemically reactive precursor is 0.5 to 0.8 times the maximum possible saturation rate.
45. (Previously Presented) The ALD process of claim 1, wherein a minimum purge time between sequential deliveries of the first and second precursors is set to a minimum controllable tolerance time.
46. (Cancelled)